NEEP 2023 Quarterly Report
Quarter 4

Building Energy Codes and Appliance Standards

At the end of 2023, the U.S. Department of Energy (US DOE) opened applications for states, territories, and local governments with the authority to adopt building codes to access $530 million in competitive funding to improve building energy codes. The new funding expands eligible activities to include customized codes and innovative code approaches such as building performance standards (BPS). States can submit concept papers by February 9, 2024, with full applications due by April 30, 2024. This competitive funding opportunity announcement (FOA) follows the earlier formula funding - Assistance for Latest and Zero Building Energy Code Adoption (Sec. 50131) for States and Territories (ALRD), both funded by the Inflation Reduction Act (IRA). In addition, states pursuing the previously released formula funding opportunity now have until January 31, 2024, to submit their letter of intent (LOI) to reserve formula funding. NEEP contacted all 12 states in the region plus the District of Columbia, offering information and assistance with submitting the LOI to apply for IRA Section 50131 formula funding per the ALRD, and provided updates on the deadline and information on the new released competitive funding. NEEP worked directly with a number of states, discussing specifics, communicating with DOE and the Pacific Northwest National Laboratory (PNNL), and in some cases drafting the LOIs for the state's review.

Base Code Adoption

States in our region that have already adopted the 2021 International Energy Conservation Code (IECC), like New Jersey and Connecticut, are ineligible for the adoption phase of the latest building code portion of the funding. However, with the competitive funding grant, they can explore innovative code approaches, such as building performance standards and stretch codes, that result in equivalent or greater energy savings to the latest model codes or zero energy codes. NEEP is assisting New Jersey with determining the best project that can be supported under the competitive funding.

The Connecticut Code Amendment Subcommittee will begin meeting to discuss the proposed 2025 Connecticut state codes on January 10, 2024. The new building code based on the 2024 International Code Council (ICC) codes, including IECC, is expected to go into effect in the fall of 2025. Code change proposals will be accepted from March 1, 2024 through April 30, 2024.

New York and Rhode Island have decided to skip the 2021 IECC in favor of adopting the 2024 IECC when it becomes available. In New York, New York State Energy Research and Development Authority (NYSERDA) released a proposed rule for the Cost-Effectiveness of Energy Code Updates with a public

comment period open until February 25, 2024. The Draft Energy Code updates on the 2024 IECC are expected to be released for public comment in March 2024. Contingent upon an affirmative determination as discussed above, these states may be able to apply their formula funding to the 2024 IECC base code adoption.

Vermont's Residential and Commercial Building Energy Standards updates incorporated 2021 IECC with strengthening amendments, with an effective date in July 2024. The date of the award will determine Vermont's IRA funding options.

Maryland adopted the 2021 IECC with weakening amendments on May 29, 2023, with an effective date starting one year from adoption. Notably, the weakening amendments may make Maryland ineligible for IRA funding based on adoption of the latest building code. New Hampshire's Building Code Review Board voted to keep the 2018 IECC in place while moving to adopt the rest of the suite of 2021 I-Codes. This decision will go to the legislature for a vote in 2024. As a result, New Hampshire may also be ineligible for IRA's latest building code funding. NEEP continues to educate states on the consequences of weakening amendments, both in terms of energy efficiency and eligibility for federal funding.

States currently moving forward to adopt the 2021 IECC and/or ASHRAE 90.1-2019 include the District of Columbia, Delaware, Maine, Massachusetts, and Pennsylvania. NEEP is working with these states to reserve funding for both the latest building code adoption and for compliance and training.

- The District of Columbia continues to actively discuss the adoption of the 2021 IECC and is two-thirds of the way through the development process of the 2021 IECC base code update.
- Delaware is planning a public hearing for the 2021 IECC adoption for early 2024. The code drafts will be available to the public before the public hearings once they are scheduled.
- In Maine, the final version of the energy code based on the 2021 IECC was approved by the Maine Uniform Building and Energy Code (MUBEC) in October 2023, and it was sent for review to the Attorney General. The commercial code is unamended. The residential code is amended to improve air sealing and increase wall insulation to assist with moisture issues. In addition, MUBEC passed Chapter 6, of the stretch energy appendix on December 21, 2023.
- In Massachusetts, the Board of Building Regulation and Standards (BBRS) released the draft 10th edition of the Massachusetts State Building Code on December 11, 2023. The next steps involve scheduling public hearings possibly starting the week of January 29, 2024. The specific dates are yet to be announced for three public hearings: one in-person in both the Boston and Springfield areas, and one virtual.
- The Pennsylvania Review and Advisory Council (RAC) closed its comment period on the 2021 IECC on August 30, 2023. RAC released a code adoption timeline for reference that can be found here.

Based on public comments received during the public comment period, the Technical Advisory Committee (TAC) provided recommendations to RAC for additional changes to the code draft.

Stretch Code Development and Adoption, Energy Code Collaboratives, Technical Assistance

Convening regional and state code collaboratives is an important part of NEEP's stakeholder engagement. These include the Maine Energy Code Collaborative and the Massachusetts Net Zero Building Coalition and Technical Subcommittee. NEEP is developing the New Jersey Energy Code Collaborative and an expanded New Hampshire Code Collaborative. NEEP continues to provide direct technical assistance to NEEP-region states and attends code board meetings both virtually and in person.

NEEP serves on the Maine Energy Technical Advisory Group (TAG) and facilitates the Maine Energy Code Collaborative. The Energy TAG is working through residential and commercial stretch energy codes based on the 2021 IECC with proposed strengthening amendments.

NEEP facilitates the Massachusetts Net Zero Buildings (MA NZB) Coalition and its Technical Committee. Design professionals on the Committee continue to test energy models according to the Massachusetts Department of Energy Resources (MA DOER) guidelines. In the fourth quarter, NEEP and the MA NZB Coalition are gathering information on common challenges and issues associated with the state's 2023 Stretch Energy and Municipal Opt-In Specialized Building Code. This information will be used to determine the next steps in addressing these challenges. Additionally, the Collaborative is collecting data on projects that have successfully implemented the 2023 Stretch Code, which can be utilized as case studies.

Delaware is working on a zero-energy-code-ready initiative per the Governor's executive order, and NEEP continues to assist the state. NEEP is actively advising New Castle County, Delaware on becoming net zero ready by 2025 for residential buildings and 2030 for commercial buildings, and on other technical provisions using new building codes or ordinances. NEEP is continuing to work with Councilperson Durham and the Counsel to County Council on the language for the ordinance. In addition, NEEP is supporting Delaware and New Castle County in exploring the possibility of submitting an application for the IRA competitive funding to support the work on the ordinance and/or stretch code.

NEEP continues to coordinate the New Jersey Zero Energy Buildings Roadmap initiative. To date, we have prepared the N.J. Zero Energy Buildings Roadmap initiative report, which has been submitted to the N.J. Board of Public Utilities and Rutgers University and is currently being reviewed by the Office of Climate Action and the Green Economy. We will convene the New Jersey Energy Code Collaborative in early 2024 to begin developing a timeline to complete the actions listed in the Roadmap.

Building Performance Standards

NEEP published a building-owner focused BPS webpage for the Center for Building Performance Standards. The webpage provides insight into how a BPS will affect building owners, how they can interpret the regulations, and actionable steps they can take to improve their buildings along with many

resources for further education. NEEP participated in completing a research report analyzing the carbon impacts of eight building performance standards across the country and their contribution to carbon reduction goals. In the fourth quarter, NEEP completed research and information gathering on BPS adopted across the region. A resource providing a summary of BPS adopted in jurisdictions within NEEP's region will be published on the NEEP website in January 2024.

Appliance Standards

NEEP's State Appliance Standard Database (SASD) is the most comprehensive appliance standards database worldwide. Massachusetts, New Jersey, New York, and Rhode Island are fully utilizing SASD as of December 31 2023, and other states (DC and MD) are expected to follow in 2024. Colorado adopted HB23-1161, which specifically references the use of SASD as an enforcement tool for their standards. NEEP is working with partners the Appliance Standards Awareness Project (ASAP) and the Environmental Protection Agency (US EPA) to develop a methodology to inform manufacturers about standards updates. Additionally, NEEP will continue to build out the SASD toolbox.

Resources

NEEP published the following resources in the fourth quarter:

- Electrification and Building Energy Codes Primer
- Enhancing Building Energy Resiliency Through Building Performance Standards and Energy Codes
- Energy Code Triggers for Existing Buildings
- Aligning Building Performance Standards and Energy Codes

NEEP also published a blog post on Charting The Future: Building Performance, Energy Efficiency, And Resilience. NEEP is working on a January edition of the Code Word newsletter.

NEEP continues to work on Remote Virtual Inspections (RVI) and Off-Site Construction. NEEP and the Midwest Energy Efficiency Alliance (MEEA) submitted an abstract for the ACEEE 2024 Summer Study on Energy Efficiency in Buildings that, if selected, will lead to a paper titled "*Benefits and Opportunities of Off-Site Construction: Analysis of Indiana and Pennsylvania*." NEEP also received input from MEEA on four additional resources, which will be published on the NEEP website in early 2024.

NEEP maintained and updated our online state code adoptions tracker as well as the building codes and standards webpages providing interested stakeholders with more information and resources.

NEEP facilitates monthly calls with all Regional Energy Efficiency Organizations (REEOs) to share information, trends, and lessons learned across regions. NEEP coordinated with US DOE/PNNL and other REEOs to set up and attend an in-person meeting December 13-14, 2023 in Seattle.

We also participated in and contributed to monthly calls with the Responsible Energy Codes Alliance (RECA) and the National Association of State Energy Officials (NASEO), providing code updates from the NEEP region.

NEEP is committed to integrating diversity, equity, inclusion, and justice (DEIJ) in all aspects of our work, and we recognize that the work we do is more than just reducing energy consumption. Energy efficiency can serve as a foundation for a just and equitable transition to a clean energy future by reducing the energy cost burden, creating safe homes and buildings, investing in local communities, improving public health, generating sustained economic growth with good paying jobs, and creating opportunities to undo past injustices in the energy, housing, and environmental sectors. Since the 2021 IECC will provide significant savings in energy costs compared to the 2018 IECC, our efforts to advance adoption help to lessen energy burden in low-to-moderate income households. NEEP is developing resources to help state energy offices provide better access to information, public hearings, and public comment submission, and to help DEIJ communities and residents participate in the code adoption process.

As we embed diversity, equity, inclusion, and justice into our core values and organizational culture, we are confident that we will generate deeper and more varied insights that we can apply to our work. We have committed to center DEIJ throughout our organization, and staff members of the Codes and Standards team serve on the NEEP DEIJ working group to further embed core principles throughout our work.

Progress Toward 2023 Outcomes	% Complete at Q4
1. Five states (Delaware, District of Columbia, Maine, Massachusetts, New Jersey, New York, Rhode Island, Vermont) and two municipalities (New Castle County, DE; Montgomery County, MD) adopt beyond-base code measures. **Progress Toward Outcome:** Massachusetts updated their stretch code and developed a municipal opt-in specialized code. Maryland adopted the International Green Construction Code (IGCC) as an optional stretch code for commercial buildings. Montgomery County, Md. passed legislation requiring all electric building standards for new construction. In Maine, MUBEC approved the residential and commercial stretch energy codes based on the 2021 IECC with proposed strengthening amendments. In New York, NYSERDA is currently working on developing the NYStretch Energy Code 2023 for both residential and commercial buildings. NEEP worked with New Castle County in Delaware on language for an ordinance toward development of a stretch code. NEEP is assisting Delaware and New Castle County in	70%

Progress Toward 2023 Outcomes	% Complete at Q4
exploring the possibility of applying for IRA funding that can continue supporting this work. NEEP is working with the District of Columbia and New Buildings Institute on a 2026 net-zero energy code.	
2. Five states (Connecticut, Delaware, Maine, Pennsylvania, West Virginia) improve code compliance through workforce development, specifically code official training, retention, and diversification. **Progress Toward Outcome:** NEEP submitted a regional workforce proposal in response to the Resilient and Efficient Codes Implementation (RECI) Funding Opportunity Announcement (FOA) covering seven states: Connecticut, Delaware, Maine, New Hampshire, New Jersey, Rhode Island, and West Virginia; while initially encouraged, this proposal was not selected. However, in writing this proposal, we began the process of goal setting and collaboration with our state partners. NEEP is working on a project selected for funding by the Bipartisan Infrastructure Law's Resilient and Efficient Codes Implementation. This project will start with building energy code compliance studies in Pennsylvania and Delaware which will also include outreach into diverse communities to provide paid internships and job awareness. Data collection and analysis will include equity components. After data evaluation, NEEP will implement a workforce training program in both states through use of in-person and online trainings, and through a hotline connected to a "circuit rider" (codes expert spanning multiple jurisdictions). Connecticut is assessing programs for continuing education "Career Development" classes for established code officials and is looking for instructors or programs relevant to the code community. NEEP provided a list of organizations that could assist the state with specifically tailored training for code officials. Connecticut has a new trainer on staff (currently in the recruitment process) that will focus on energy efficiency topics. In Maine, NEEP developed a recruitment flyer for the passivhausMAINE training program, to disseminate available training to code officials. NEEP is assisting Delaware and connecting the state with NEEP allies to facilitate their receipt of workforce development funding through IRA. The states are eligible to apply for formula funding through Assistance for Latest and Zero Building Energy Code Adoption (Sec. 50131) for States and Territories and	50%

Progress Toward 2023 Outcomes	% Complete at Q4
competitive funding, both funded through the IRA. This funding can be used to further improve code compliance through workforce development, specifically code official training, retention, and diversification. NEEP worked directly with states, discussing specifics, communicating with US DOE/PNNL, and drafting letters for the state's review to secure formula funding for their efforts.	
3. Four states (Connecticut, Maryland, New Hampshire, New Jersey, Pennsylvania, Vermont) adopt code and appliance standards attribution initiatives. **Progress Toward Outcome:** Maryland continues to move toward their new appliance standards, whose effective date has been pushed back to July 1, 2024. The draft standards can be found here. Pennsylvania has two bills to adopt new energy standards moving through the legislature, SB422 and HB1467. Both have yet to be heard by the committee and this will likely be delayed into early 2024. New Jersey's law AB5160, effective January 18, 2023, establishes energy and water efficiency standards for 17 appliance categories, with savings attributed to the state's FY25-FY27 targets. The NJ Uniform Construction Code, adopting ASHRAE 90.1 2019 and IECC 2021, effective March 6, 2023, brings significant savings for FY25-FY27, as acknowledged by the New Jersey Board of Public Utilities and Rutgers University's Center for Urban Policy and Research in their attribution analysis. Both savings analyses are expected to be updated regularly.	40%
4. Three states (Connecticut, Delaware, New Hampshire, Pennsylvania, Vermont) adopt appliance standards, four (District of Columbia, Massachusetts, New Jersey, New York, Rhode Island) implement adopted standards, and two (Connecticut, Maryland, Massachusetts, New Jersey, New York) adopt air regulations NOx for appliance standards. **Progress Toward Outcome:** Connecticut may propose a bill this coming legislative session in 2024 to adopt new standards. Massachusetts, New Jersey, New York, Rhode Island, and Washington, D.C. all have implemented their adopted standards. States such as New York and New Jersey have expressed interest in adopting air regulation NOx standards for water heaters, but since the federal government is currently in the process of adopting an efficiency standard for water heaters, states will wait.	70%

Progress Toward 2023 Outcomes	% Complete at Q4
5. Three states (Maryland, Massachusetts, New Jersey, Rhode Island) implement Remote Virtual Inspection. **Progress Toward Outcome:** NEEP has been disseminating its RVI resources through the project Technical Advisory Group. On May 18, 2023 NEEP hosted a webinar as part of our Ready, Set, Scale series on "Expanding Building Inspections: RVI and Off-Site Construction." A resource on Jurisdictions Using RVI is expected to be published in the first quarter of October 2024. In the NEEP region, the following jurisdictions are using RVI: **Maryland** • Prince George's County allows virtual inspections for limited projects, including residential construction projects involving electrical service upgrades, electrical reconnects, mechanical service upgrades, and follow-up inspections. **New Hampshire** • Nashua allows for RVI in inspections involving replacement of mechanical equipment, gas service reconnection, plumbing repairs, sewer repair/replacement, electrical repairs and service upgrades, non-structural interior alterations/renovations, and rough electrical, plumbing, and mechanical alterations/renovations up to 1,000 square feet. There is also the possibility of considering permits/projects outside of these. Although the city still allows and promotes RVIs, since COVID-related restrictions were lifted, it has noticed less interest in the RVI program. **Connecticut** • West Hartford allows the use of RVI as an alternate inspection method to an in-person, on-site inspection. Eligible inspections are determined by the Chief Building Official or their designee based on the type of inspection and outside factors such as the complexity of the project, construction methods, safety, weather, and/or other contributing factors. RVIs are meant to be live via audio and video, conducted at an allotted time, with both inspector and permit holder, contractor, or building owner on site. • Norwich can receive requests for either on-site or remote inspection, however, the city only uses RVIs for re-inspections to show compliance after adjustments or changes were made or for minor projects.	100%

Progress Toward 2023 Outcomes	% Complete at Q4
• Manchester allows for RVIs for some interior inspections. The program has proven effective especially in addressing staffing shortages and in facilitating inspections in challenging weather conditions. **Delaware** • New Castle County allows RVIs for inspections involving slab on grade, minor framing/installations, re-installations, heating, ventilation, and air conditioning (HVAC) and plumbing replacements, and roofing system replacements.	

Grid-Interactive Homes and Buildings

Grid interactive homes and buildings are a key component to the region's decarbonization efforts, enabling broad building electrification as well as helping to manage intermittent renewable power supply. In the near term, these homes and buildings are serving to reduce the need for expensive grid/pipeline infrastructure investments and prevent expensive spikes on the grid. In the long term, these resources will be tapped like power plants, dispersing excess energy and providing it back as needed.

Webinars

NEEP participated in two webinars that sought to accelerate the Grid Interactive Homes and Buildings (GIHBs) policy in 2024. The first was NEEP's October Ready, Set, Scale Webinar, Unlocking the Power of Energy Data. This webinar looked at how states can use IRA funding and DOE program guidance to unlock utility data and exponentially grow efficiency and peak demand programs. The webinar featured insights from Oracle and Calico Energy. NEEP also published a blog to dig into the topic a little deeper, Unlocking the Power of Energy Data.

NEEP presented and organized a webinar series alongside ACEEE (American Council for an Energy-Efficient Environment), Just Solutions, and NRDC (Natural Resources Defense Council) to help State Energy Offices design their IRA Rebates program. The third webinar in the series examined what regulators can do, for this webinar NEEP provided insight to our attribution work and how attribution can enable states to discuss unlocking utility data. Additionally, speakers on the webinar provided insight into data and measured programs that states can look into to enable GIHBs programs and grow policies with IRA Rebates.

Technical Assistance

In the fourth quarter, NEEP became a member of NECEC's (New England Clean Energy Council) energy efficiency and demand response working group. NEEP provides technical assistance to the group on demand response and energy efficiency policies in the northeast. NEEP also provides a policy update for each meeting to set the stage for the region.

NEEP focused on helping states in the region implement GIHBs programs during the fourth quarter through providing comments on IRA plans in Maryland and speaking best on how to leverage IRA to grow GIHBs policy at a technical conference in New Jersey.

Working Groups

NEEP launched two working groups to help implement GIHBs programs throughout the region, a state energy office working group and an evaluation, measurement, and verification (EM&V) working group. For 2023, our state energy office working group focused on how to best leverage Inflation Reduction Act Funds to grow energy efficiency and demand response programs in the region. Meetings for this quarter focused mostly on workforce and braiding of funds. For the EM&V working group in 2024, NEEP focused on attribution and IRA programs and we are hoping to identify a topic that will help move the landscape towards more grid-interactive homes and buildings. Both groups kicked off after January 2023 and grew throughout the year. EM&V grew from 15 to 35 participants and the state energy office working group has representation from every state in the NEEP region.

Progress Toward 2023 Outcomes	% Complete at Q4
1. Two state regulatory agencies (New Jersey, New York, Vermont) modify cost-benefit analysis for energy efficiency and/or grid planning to measure the value of real-time energy generation and use, such as adopting a Total Systems Benefit metric or similar measurement. **Progress Toward Outcome:** In the second quarter, New Jersey announced modifications to its benefit-cost analysis for its second round of programs. While the state did not adopt the Total Systems Benefit metric, it will study and review the possibility of adding this metric to the next round of programs. NEEP is tracking Massachusetts, Maine, and Maryland proceedings as well. We did not see any additional movement on this outcome, but have heard more states in our region discuss the need for a metric for real time energy generation and hope to see these discussions continue in 2024.	25%
2. Two utilities or program administrators (New Jersey, Vermont) design incentive programs for grid-interactive appliances and equipment with specific consideration for overcoming equity barriers. **Progress Toward Outcome:** New Jersey has released the framework for program implementation for its next round of energy efficiency programs, which includes a demand response program and roadmap for the state to incorporate it into its existing energy landscape. NEEP submitted comments on the program that highlighted ways to center equity in the	40%

Progress Toward 2023 Outcomes	% Complete at Q4
design and implementation. NEEP will continue to monitor the process to set up the demand response programs and provide technical assistance when possible. NEEP is also monitoring proceedings in New Hampshire and Rhode Island: • New Hampshire Utilities have filed their 2024 – 2026 Triennial NHSaves Energy Efficiency Plan. The plans include converting pilot demand response programs into full programs. NEEP will continue to monitor the process to set up the demand response programs and will provide technical assistance when possible. Rhode Island has initiated a new process to bid out is energy efficiency programs, and will be writing the RFP for the programs over the summer. This could present an opportunity to require new programs, like demand response and beneficial electrification from the provider. NEEP will continue to monitor the process to set up the demand response programs and will provide technical assistance when possible.	
3. Two state regulatory agencies (Massachusetts, New Jersey) create statewide frameworks to accelerate adoption of GIHBs technologies. **Progress Toward Outcome:** The Maryland Public Service Commission is convening the Maryland Unified Benefit Cost Analysis Test Working Group to help in the development of a Maryland-specific Unified Benefit Cost Analysis (UBCA). The Order Establishing the Workgroup and instructions on how to join can be found here. The Workgroup will create a unified benefit cost analysis for all distributed energy resources in the state, including energy efficiency programs and electric vehicles. NEEP will continue to monitor the process and will provide technical assistance through the Working Group. New Jersey announced in the order for their New Energy Efficiency Programs portfolio they will be writing a Demand Response State Adoption Framework. This step can serve as an example for future states in this space.	40%
4. One state (Massachusetts, New York, Rhode Island) adopts a first-of-its-kind regulatory framework to prioritize energy efficiency and other demand side resources over the expansion of pipes and wires infrastructure.	100%

Progress Toward 2023 Outcomes	% Complete at Q4
Progress Toward Outcome: In December 2023, the Massachusetts Department of Public Utilities (DPU) issued an order announcing a new regulatory structure for gas utilities in the state. The strategy is meant to reflect the state's GHG (greenhouse gas) emissions reduction goals and align the regulation and investment of natural gas utilities with state climate goals and strategy more properly. In the order, the DPU orders gas distribution utilities to consider non-gas alternatives when asking to invest in gas expansion projects at the DPU. The utilities will also be required to file Climate Compliance Plans every 5 years to ensure compliance with the state's emissions limits In Maine, LD1724**, the Beneficial Electrification Policy Act** passed and began implementation. It requires the Public Utilities Commission (PUC), Efficiency Maine Trust, and other state agencies to implement policies and programs that support beneficial electrification. The PUC shall study options for consumer financing of beneficial electrification products and submit those results to the Legislature by December 6th, 2023. In Rhode Island, H5849**, Public Utilities Commission**. This bill was signed by the Governor on June 19th, 2023. It requires electricity and gas revenues to be decoupled and allows for the adoption of performance incentives. The decoupling hopes to accomplish investments in energy efficiency, reliability, and reduce risk.	

Heating Electrification Market Transformation

The Northeast saw exciting progress for heating electrification in 2023 with NEEP at the center of many impactful collaborative efforts. As states grappled with new Inflation Reduction Act fund guidance, NEEP provided support in several areas including the Training for Residential Energy Contractors (TREC) program. A robust contractor workforce is key to equitably and affordably reducing building-sector GHG emissions. NEEP also provided both Residential and Commercial Heat Pump Rebate trackers for stakeholders to understand the current program landscape and trends.

NEEP provided thought leadership to equip the region with best practices and new insights to accelerate heating electrification. This includes several blog posts and an Emerging Heat Pump Technology Brief set to be released in the first quarter of 2024. NEEP along with Advanced Water Heating Initiative co-developed a white paper on Equitable Access to Heat Pump Water Heaters. This Paper is a compilation of the presentations made during the working group meetings throughout the year, and will be released in the first quarter of 2024. NEEP also presented at several conferences including the ACEEE Hot Air Forum & Hot Water Forum, BuildingEnergy Boston, DOE Peer Review, ACEEE National Conference on Energy Efficiency as a Resource, and a NECA panel.

Research continues to be a major market transformation tool for NEEP by providing robust evidence and actionable insights to regional stakeholders. The Rating Representativeness Research Project, which aims to accurately characterize heat pump performance, wrapped up testing and analysis with a results report expected in early 2024. In the fourth quarter, the VRF In-field Validation Project progressed to performance data analysis, which will be disseminated in early 2024 to key market actors. NEEP collaborated with other organizations to develop resources and learning modules being piloted through the BENEFIT Project. And finally, the nation-wide DOE American Society of Health-System Pharmacists (ASHP) /Heat pump water heater (HPWH) Field Validation Partnership kicked off in 2023 and will continue to fill in market gaps over the next two years with NEEP at the helm of two committees and actively participating in four others focused on workforce development and regional market & policy.

With over 370 average daily users, NEEP's Cold Climate Air Source Heat Pump list continued to serve the region as a tool to ensure efficient heat pumps are installed throughout the Northeast. All improvements to the embedded sizing tool, which leverages the extended performance data on the list to model heat pump performance, have been completed and users have given positive feedback. This helps to promote quality sizing and selection of efficient electric equipment in the Northeast. This tool is currently being

integrated into PNNL's Heat Pump Decision-Making Tool and is used in several installer training programs in the Northeast and beyond.

NEEP brought together regional stakeholders across the heating electrification market for our highly collaborative annual Heating Electrification Workshop. Unique to this year's workshop, we hosted several contractors on stage to share their perspectives on cold climate heat pumps. These contractors, disseminated valuable information and forged important new relationships with key mid-stream actors that NEEP intends to grow. The Workshop sessions also provided valuable lessons for the region on designing and implementing low-to moderate income (LMI) programs and scaling emerging heat pump technologies, especially in commercial buildings. Ahead of the Workshop, NEEP hosted a combined Residential and Commercial Heating Electrification Working Group which sparked collaboration opportunities amongst regional stakeholders.

Progress Toward 2023 Outcomes	% Complete at Q4
1. Five states (Delaware, District of Columbia, Maryland, Pennsylvania, New Hampshire, New Jersey) adopt workforce development programs to train existing installers and/or recruit and train new installers on installing heat pump technologies, with a focus on including candidates from historically marginalized communities. **Progress Toward Outcome:** **Delaware**: The Governor's Energy Advisory Council (GEAC) of Delaware is charged with providing recommendations to Department of Natural Resources and Environmental Control's (DNREC's) State Energy Office on updates to the Delaware Energy Plan. The Energy Efficiency and Electrification Workgroup submitted the following recommendation for consideration to the Energy Plan: promote expanding workforce development opportunities for energy efficiency, electrification, and code compliance efforts by working with educational institutions and other stakeholders. Once all recommendations are finalized, the DNREC State Energy Office will use them to create the updated Delaware Energy Plan, which will be released for public input before finalization. While a workforce development program including focus on inclusion was not adopted in Delaware in 2023, this is an opportunity to work with the state in 2024 to incorporate equitable workforce development in the final energy plan. Source: https://www.delawarepublic.org/science-health-tech/2023-12-15/governors-energy-advisory-council-approves-first-set-of-recommendations-for-updated-delaware-energy-plan	60%

Progress Toward 2023 Outcomes	% Complete at Q4
Source: https://documents.dnrec.delaware.gov/energy/geac/recommendations/Energy-Efficiency-and-Electrification.pdf **Maryland**: Maryland's Climate Solutions Now Act of 2022 requires Maryland Dept of Environment to create a Building Energy Transition Implementation Task Force to recommend programs, policies, and incentives aimed at reducing greenhouse gas emissions from the buildings sector. The taskforce tasked AECOM (Architecture, Engineering, Consulting, Operations, and Maintenance) with providing recommendations to their plan including workforce program design. Their recommendation for a model apprenticeship program/workforce development program includes: - Identifying the career pathways that Maryland wants to support (heating, ventilation, and air conditioning or HVAC technicians included in options) - Partnering with organizations to create, sponsor, and promote programs - Providing and leveraging funds for these programs - Promoting the programs and educating target communities on ways to get involved (intended for minority, women and disadvantaged business enterprises, and environmental justice communities) Though the workforce development program was not implemented in 2023, this presents an opportunity to partner with Maryland to ensure a robust program for installers, especially focused on historically disadvantaged community participation. **New Jersey**: New Jersey Triennium 2 Straw Proposal has put forth a new state-funded workforce development initiative in partnership with the Department of Labor to recruit and train participants from overburdened communities. New Jersey's Clean Buildings Working Group is guiding the state's roadmap to clean buildings, which will include recommendations for workforce development strategies. The state has several current pilot projects including New Jersey Board of Public Utilities (BPU) Whole House Pilot, in collaboration with New Jersey Dept of Labor and Workforce Development's Greener Buildings Pilot, designed to increase efficiency and advance electrification in 100 LMI homes in Trenton, New Jersey as well as support workforce development. **Pennsylvania**: The Energy Coordinating Agency of Philadelphia has a new heat pump lab for HVAC training programs, but as far as we know there is no coordinated state-wide workforce program.	

Progress Toward 2023 Outcomes	% Complete at Q4
Maine (Additional State): Maine established Clean Energy Partnership - Workforce Initiative; https://www.maine.gov/energy/initiatives/cep . The programs will support innovation of advanced technologies and services that contribute to the achievement of the State's clean energy and climate goals. Governor Mills has committed to more than doubling Maine's clean energy jobs to 30,000 by 2030 and has invested $8M in the Clean Energy Partnership. While the initiative does not include a specific goal to include historically disadvantaged communities, NEEP hopes to work with the ME Governor's Energy Office to establish one in 2024. **New York (Additional State):** New York introduced S02469 which directs the public service commission to develop and issue guidelines for hiring training employees from priority populations for energy efficiency programs. Status: engrossed on June 1, 2023 – 50% progression. The bill was referred to the Senate Energy and Telecommunications Committee on Jan 3, 2024. In 2024 we plan to encourage equitable workforce development programs for heat pump installers by creating a HVAC Workforce Development Program Best Practices with the help of stakeholder working groups on behalf of PNNL/DOE. We will also further these efforts by participating in the PNNL ASHP Field Validation Partnership on several workforce-related subgroups including HP/HPWH Training for Distributors and Sales Representatives / Dealers, In-Field On-the-Job Training / Guidance, Addressing Skilled Labor Shortage, and Resources for Contractor Comfort. NEEP also is assisting with state applications for formula funding for the IRA State-Based Home Energy Efficiency Contractor Training Grants.	
2. Across the NEEP region, five states (District of Columbia, Massachusetts, New Jersey, New York, Rhode Island, Vermont) and/or energy efficiency program administrators introduce new program incentives/promotions to support emerging heat pump categories. **Progress Toward Outcome:** • **New York:** Residential ATW (air-to-water heat pumps), Ground-source VRF (variable refrigerant flow), Commercial ATW • **Massachusetts:** Ground-source VRF, PTHP (package terminal heat pump), RTU (roof-top units) • **Maine:** Commercial RTU • **Rhode Island:** VRF	100%

Progress Toward 2023 Outcomes	% Complete at Q4
• **Vermont:** Residential and Commercial ATW, Vertical Packaged Heat Pumps • Several programs (MA, PA, ME, DE) allow "custom" programs which include unspecified heat pump technologies that save energy	
3. Programs across nine "cold climate" states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont) use NEEP's ccASHP product list (as a qualified products list (QPL) and/or product selection tool). **Progress Toward Outcome:** • **Connecticut** uses NEEP's product selection tool in contractor training. • **Maine** includes NEEP's Guide to Sizing & Selecting Air-Source Heat Pumps in Cold Climates in heat pump training resources. • **Massachusetts** utilizes NEEP's sizing tool as part of Mass Save's Heat Pump Installer Training (HPIN). Several Municipal Light Plants and Mass DOER use NEEP's ccASHP product list. • **New York** State's Clean Heating and Cooling program along with participating utilities use NEEP's ccASHP product list for the program's QPL (qualified products list) and our sizing tool is used in contractor training. • **Rhode Island** Energy uses NEEP's product list for their QPL. • Several **Vermont** entities use the ccASHP product list for their program's QPL including Efficiency Vermont and Burlington Electric Department While we did not fully meet this outcome, NEEP expects the number of states utilizing the product list to grow in 2024, particularly as a tool to support effective sizing/selection. NEEP plans to provide more outreach to states and programs to communicate the latest use cases and functionality.	67%
4. Three state programs (District of Columbia, Maryland, Massachusetts, New York, Pennsylvania) implement heat pump and heat pump water heater program enhancements for low-to-moderate income customers. **Progress Toward Outcome:** • **Massachusetts:** MassCEC (Massachusetts Clean Energy Center) offers income-based rebate adders for clean heating and cooling technologies. Mass Save offers increased incentives for low-income households for ASHPs and GSHPs (ground source heat pump). • **New York:** EmPower NY provides income-eligible NY residents with no-cost energy efficiency solutions, including the installation of clean heating and	100%

Progress Toward 2023 Outcomes	% Complete at Q4
cooling heat pumps. Con Edison provides ground source heat pump rebates up to 70% of the project to customers in Disadvantaged Communities. PSEG Long Island offers higher incentives for heat pump installation for income-eligible customers. • **Pennsylvania:** Utility PPL of Pennsylvania offers no cost heat pump installation for income-eligible customers. • **Delaware:** Energize Delaware offers higher incentives for heat pumps to income-eligible customers through Assisted Home Performance with ENERGY STAR • **Maine:** Efficiency Maine offers increased heat pump incentives to Low and Moderate income Mainers • **New Jersey:** All New Jersey residential programs offer a $200/unit rebate adder for income-eligible customers • **Rhode Island:** Clean Heat Rhode Island offers to cover 100% of the cost for air source heat pump + weatherization for income-eligible customers switching from oil, propane, or natural gas. • **Vermont:** Efficiency Vermont offers bonus rebates between $200-800 for income-eligible customers • **West Virginia:** West Virginia's Appalachian Power offers low-income customers $200 extra in rebates for air source heat pump installation.	
5. Three states (Connecticut, Massachusetts, New Jersey, Vermont) reconsider key state policies that slow adoption of heating electrification. **Progress Toward Outcome:** • **Connecticut** is aiming to speed heat pump adoption through the 2022-2024 Conservation and Load Management (C&LM) Plan. The plan addresses barriers to heat pump adoption, including policy barriers. CT DEEP • **Massachusetts** Commission on Clean Heat endorsed a Clean Heat Standard (CHS) to reduce building sector emissions. The CHS includes a goal of +/- 100,000 residential heat pump installations per year from 2025-2050 and supportive policies to accelerate adoption of heating electrification. The CHS program is being designed with stakeholder engagement. • **New Jersey**'s Gov. Phil Murphy has signed executive orders to accelerate the state's building electrification goals. The New Jersey Energy Master Plan calls for building electrification by 2050 and the state is aiming to accelerate heat pump adoption through legislative change.	100%

Progress Toward 2023 Outcomes	% Complete at Q4
• **New Jersey** Board of Public Utilities approved measures to encourage building owners to switch from natural gas to heat and is establishing a new Building Decarbonization Program. • **Vermont**'s Affordable Heat Act Bill S.5 proposes a clean heat standard to accelerate heating electrification. The Governor vetoed the bill, but both the House of Representatives and VT Senate voted to override the veto, enacting the bill into law, which triggered a two-year process to design the program. • **New York** (additional state) introduced the NY Home Energy Affordable Transition Act which directs the Public Service Commission to end the mandate for ratepayer-subsidized incentives for fossil fuel infrastructure in new buildings in an equitable manner. The current bill is in Assembly Committee and passed the Senate.	

Public Policy and Programs

In the fourth quarter, NEEP continued to meet with State Energy Offices (SEOs) and stakeholders across the region on implementation of the Inflation Reduction Act Rebates and Contractor Training Grants (CTG) Programs. NEEP convened the final meeting of its evaluation, measurement, and verification (EM&V) working group and is finalizing a white paper informed by their feedback. NEEP also hosted a webinar on the importance of data access and the impacts of Mid-Stream, Market Transformation Programs. Finally, NEEP worked with states in the region to implement IRA Rebates by submitting comments in their proceedings, speaking at events, and co-hosting a national webinar series alongside ACEEE, Just Solutions, and NRDC.

Working Groups

NEEP convened the final meetings for its State Energy Office and EM&V Working Group in the fourth quarter.

In 2023, our state energy office working group focused on how to best leverage the Inflation Reduction Act to grow energy efficiency and demand response programs in the region. The working group started discussing comments to DOE in February and now meets monthly to highlight best practices for in energy efficiency programs across the nation. These meetings are open to State Energy Offices (SEO) only and provide a space for states to learn more about innovations in programs and identify pathways to implement them in their respective states. In the fourth quarter, the meetings included discussions around braiding program funds (with guest speakers from Built to Last and Total Energy Pathways) and what an energy efficiency workforce looks like (with an in-depth look at how to train installers of heat pumps and heat pump water heaters to comply with state programs).

NEEP originally planned to convene the EM&V working group for a paper on attribution with IRA programs, but there has been significant interest in the attribution discussion, as well as other changes to the EM&V space to enable building decarbonization policy. In 2024, we are hoping to reconvene the group to identify a topic that will help move the landscape towards more grid-interactive homes and buildings.

Both groups kicked off in 2023 and grew throughout the year. EM&V grew from 15 to 35 participants and the state energy office working group has representation from every state in the NEEP region. NEEP is excited to continue this work in 2024 and see how these groups can help implement long-term building decarbonization policies in our region.

Technical Assistance

In the fourth quarter, NEEP provided technical assistance in the form of comments and through speaking events in the region. NEEP provided comments to Maryland on how to best leverage the Inflation Reduction (IRA) in their state, as well as some best practices from across the region. Additionally, NEEP presented at a New Jersey technical conference on how to leverage IRA programs in the state to grow building decarbonization efforts in the state. Clean Heat Standards implementation also kicked off during the fourth quarter in Massachusetts and Vermont. NEEP has been attending technical sessions to learn about plans for program design in both states. In addition, NEEP wrote comments in to Massachusetts on their draft program framework to highlight ways to ensure the CHS works to encourage adoption of heat pumps and heat pump water heaters; and the program prioritizes equity.

Deliverables

NEEP is writing a paper on best practices for attributing energy savings when braiding IRA and utility programs. This paper is informed by our EM&V Working Group and will lay out pathways for states to braid programs depending on their current program landscape and statewide energy and building decarbonization goals. This paper will be out for review in January 2024.

NEEP continued its work on the Policy Layering Brief, now Policy Table Brief, in Q4. The Brief will look at long-term policies such as building performance standards, emissions-based appliance standards, and clean heat standards and examine how these policies interact with one another and drive market transformation. The Brief will be ready for review in January 2024. Both of the projects will undergo external review.

Additionally, NEEP is continuing to work with the Association of Energy Services Professionals (AESP) on a BENEFIT Grant project to develop a series of accredited online courses focusing on new grid-interactive energy technologies, also commonly referred to as demand flexible loads. NEEP's tasks for this past quarter included reviewing and providing recommendations to course outlines. NEEP also responded to requests for the REED Data Master Workbook and kicked off the next round of data collection.

Webinars

NEEP presented in two policy focused webinars in the fourth quarter of 2023. The first was NEEP's October Ready, Set, Scale Webinar, Unlocking the Power of Energy Data. This webinar looked at how states can use IRA funding and DOE program guidance to unlock utility data and exponentially grow efficiency and peak demand programs. The webinar featured insights from Oracle and Calico Energy. NEEP also published a blog to dig into the topic a little deeper, Unlocking the Power of Energy Data. The second was the Ready, Set, Scale in December, Demystifying Mid-Stream HPWH Programs. This webinar sought to breakdown what a mid-stream or market transformation program is and discussed a very successful one already operating in our region.

NEEP presented and organized a webinar series alongside ACEEE, Just Solutions, and NRDC to help State Energy Offices design their IRA Rebates program. The third webinar in the series examined what regulators can do, for this webinar NEEP provided insight to our attribution work and how attribution can enable states to discuss unlocking utility data.

Tracking Energy Efficiency and Building Decarbonization

The Policy team is tracking regulatory proceedings and legislation, as well as participating in state-run working groups to advance decarbonization policies throughout the region. For the fourth quarter, NEEP tracked and attended state run regulatory working groups on the Massachusetts Energy Efficiency Plans and New York Cap-and-Invest Program. NEEP is also tracking Maryland Energy Efficiency Plans, New Jersey Energy Efficiency Plans, and implementation of Clean Heat Standards in Massachusetts and Vermont.

The Policy team also tracks bills across the region with our legislative web tracker, which also includes legislation from the past three years. The tracker is updated weekly and highlights are shared with NEEP's Allies network via the Allies newsletter. NEEP follows new bills closely to identify key target areas and trends, with an emphasis on climate goals and roadmaps, workforce development, equity, and building codes and standards.

Progress Toward 2023 Outcomes	% Complete at Q4
1. Four states (Maryland, New Hampshire, New York, Pennsylvania) advance legislation or regulatory initiatives that increase equitable access to benefits of energy efficiency programs statewide. **Progress Toward Outcome:** In January 2024, the Massachusetts DPU ordered a study of energy burden and affordability programs in an effort to ease the burden of higher electrical costs during its transition. As part of this proceeding regulators, are going to look at how to reduce the financial energy burden for lower-income residents. This study will consider options to lower costs by changing the requirements to qualify for assistance and tying utility costs to household income, as several other states do through percentage of income payment plans (PIPPs). This step is significant in addressing the growing energy burden in underserved communities as well as the cost (upfront and operational) of building decarbonization technologies as this transition continues. Maine passed *An Act to Provide Energy Efficiency Program Outreach and Assistance to Manufactured Housing Residents*. It requires the Maine State Housing Authority to participate in education and outreach services to those living in manufactured housing. This outreach must include current energy efficiency programs run by the Efficiency	75%

Progress Toward 2023 Outcomes	% Complete at Q4
Maine Trust and the Maine State Housing Authority and include an application for the residents to apply. Maine also passed LD611, *Establishing a Working Group to Maximize Eligibility for Energy Efficiency Programs for Low-income Homeowners*. This bill was sent to the Governor's office on June 15th, 2023. It requires the Maine State Housing Authority to convene a working group to design a program that will provide financial assistance to low-income homeowners for weatherization and home energy assistance programs. Connecticut released the framework for Phase 1 of their Performance Based Rates Proceeding. During this phase, the state identified four regulatory goals for the performance-based rates: excellent operational performance, public policy achievement, customer empowerment and satisfaction, and reasonable, equitable, and affordable rates. To read more about how performance based rates can increase equitable access to programs, see NEEP's blog.	
2. Three states (New Jersey, New York, Vermont) take steps to align energy efficiency programs with state climate policies by incorporating climate-focused metrics. **Progress Toward Outcome:** New Jersey released its first order of the framework of the programs and adopted modifications to its benefit-cost analysis based on the recommendations from NEEP. These modifications included an increase in the non-energy impacts (NEIs) for residential and commercial HVAC programs that use efficient electric appliances to 15% and an increase in the low-income benefits adder to 15%. The state will also be studying the adoption of the Total Systems Benefit metric to measure program impacts for the next cycle. NEEP is monitoring and providing technical assistance to Maine, Maryland, and Massachusetts's energy efficiency proceedings to see if other actions are taken in Q4.	25%
3. Three state regulatory agencies (Massachusetts, New York, Vermont) advance beneficial electrification policies that regulate gas, oil, and/or propane use. **Progress Toward Outcome:** • In December 2023, the Massachusetts Department of Public Utilities (DPU) issued an order announcing a new regulatory structure for gas utilities in the state. The strategy is meant to reflect the state's GHG emissions reduction goals and align the regulation and investment of natural gas utilities with state	33%

Progress Toward 2023 Outcomes	% Complete at Q4
climate goals and strategy more properly. In the order, the DPU orders gas distribution utilities to consider non-gas alternatives when asking to invest in gas expansion projects at the DPU. The utilities will also be required to file Climate Compliance Plans every 5 years to ensure compliance with the state's emissions limits Other proceedings we are watching: • New York has announced an economy wide Cap-and-Invest Program for New York. The cap-and-invest program will set a declining cap on Greenhouse Gas (GHG) emissions and invest in equitable emissions reductions program. Large scale greenhouse gas emitters and distributors of heating and transportation fuels will be required to purchase allowances for emissions associated with their activities. The proceeds will support states investments in climate mitigation, energy efficiency, clean transportation, and an annual Climate Action Rebate that will be distributed to all New Yorkers to mitigate potential consumer costs associated with the program. • Massachusetts Department of Environmental Protection (MassDEP) has initiated a stakeholder process to develop the state's clean heat standard (CHS). • Vermont passed legislation to enact a Clean Heat Standard. The Public Utilities Commission has initiated a docket to establish the standard. New Jersey's governor signed an executive order for the Board of Public Utilities to initiate a process to create a comprehensive plan for a future less reliable on fossil fuels and setting a statewide target for installation of zero-carbon emission heating and cooling technology.	
4. Four states (Maine, Maryland, New Jersey, Pennsylvania), through legislation or regulation, invest in and implement statewide energy efficiency workforce initiatives that prioritize historically marginalized and/or undeserved communities. **Progress Toward Outcome:** New Jersey Triennium 2 Straw Proposal has put forth a new state-funded workforce development initiative in partnership with the Department of Labor to recruit and train participants from overburdened communities.	25%

Retrofit Models

NEEP's Retrofit Models project accelerates the uptake of comprehensive retrofits in both the residential and commercial sectors. The team fosters collaboration to explore and identify barriers, best practices, and expand upon scalable ideas.

The Total Energy Pathways (TEP) Workforce Development project aims to grow and diversify the residential retrofit workforce. The absence of an adequate workforce was identified as a barrier to scaling whole-home energy retrofit programs such as the Zero Energy Now Pilot in Vermont. NEEP has been working with BPA (Bonneville Power Administration), BPI (Building Performance Institute), and EFG (Energy Futures Group) to create a new BPI Certificate of Knowledge and accompanying training materials. The fourth quarter was the culmination of a year of hard work. With the training modules complete and the exam ready, the project team launched the pilot exam. The pilot will run through the end of March 2024 with the goal of testing at least 200 people. At the end of the fourth quarter ~130 people had taken the test. The team spent time identifying the target demographic for TEP: entrepreneurial contractors with 5-10 years of experience looking to create a new business and set themselves apart. Two testimonial videos were created with quotes from individuals who had completed the training and taken the exam and will be used to generate interest. In the new year, NEEP will work with partners to find ways the Total Building Performance Certificate can be integrated into training programs.

NEEP's state energy office IRA Implementation Working Group will help states implement scalable and sustainable retrofits models with IRA Rebates and offer follow up technical assistance. In Q4 the NEEP team collaborated to host two working group meetings. The first meeting introduced the Energy Offices to three retrofit programs (Massachusetts Decarbonization Pathways Pilot, Vermont Zero Energy Now, and Philadelphia Built to Last) and featured external speakers representing these programs. The second meeting focused on workforce development and training programs to support states wishing to use the federal TREC funds. The NEEP team highlighted three training programs: Mass Save Clean Energy Pathways, ReMaine, and Total Building Performance Certificate, as well as a deep dive on heat pump- and heat pump hot water-specific trainings and opportunities.

The U.S. Department of Energy (U.S. DOE), along with regional energy efficiency organizations like NEEP, NEEA and national labs, launched the Partnership for Advanced Window Solutions (PAWS). PAWS will support utility programs and assist in developing consumer incentive programs for advanced window solutions. NEEP serves on the PAWS leadership team and participates in PAWS's Utility and Codes/Standards/Ratings working groups. NEEP also began leading the formation of an Equity Working

group for driving High Performance Window adoption through LMI programs. NEEP will be working with the PAWS leadership team to create and execute this working group. NEEP continues to participate in the Commercial Windows Secondary Glazing working group and promote storm windows and insulating panels as cost-effective efficiency measures. NEEP is also working with PAWS and State Energy Offices to add high performance windows to Technical Reference Manuals (TRMs) in the northeast states. In the fourth quarter, NEEP commenced a research project to summarize the offerings of current TRMs and identify which ones contain information on modern electrification and energy efficiency technologies. This research will be used to support talks with state energy offices to update TRMs.

Progress Toward 2023 Outcomes	% Complete at Q4
1. Five states (Maine, Maryland, New Jersey, Rhode Island, Vermont) take regulatory or legislative steps to implement statewide programs that expand access to whole-building deep energy efficiency retrofits in underserved communities. **Progress Toward Outcome:** In July, the Massachusetts Clean Energy Center opened the second cohort for the Decarbonization Pathways Pilot. NEEP remains engaged in the project advisory committee. Maine passed the following two pieces of legislation: LD611, *Resolve, establishing a Working Group to Maximize Eligibility for Energy Efficiency Programs for Low-income Homeowners*. This bill was sent to the Governor's office on June 15th, 2023. It requires the Maine State Housing Authority to convene a working group to design a program that will provide financial assistance to low-income homeowners for weatherization and home energy assistance programs. LD815, *An Act to Provide Energy Efficiency Program Outreach and Assistance to Manufactured Housing Residents*. This bill passed both chambers on June 7th, 2023. It requires the Maine State Housing Authority to participate in education and outreach services to those living in manufactured housing. This outreach must include current energy efficiency programs run by the Efficiency Maine Trust and the Maine State Housing Authority, and provide a mechanism for the residents to apply to participate in their programs. The Pennsylvania Whole Home Repairs Program took additional steps towards implementation in early 2023 by seeking county-level organizations to be program administrators. The list of community action agencies can be found on the participating	60%

Progress Toward 2023 Outcomes	% Complete at Q4
agency list. Homeowners and landlords are now able to apply for funding by sending an email to their local agency.	
2. Two states (Connecticut, New York) standardize definitions for weatherization. **Progress Toward Outcome:** There is nothing new to report on this outcome at this time.	33%
3. Three state or municipal whole-building retrofit programs (Connecticut, New Jersey, New York) include training opportunities focused on expanding access to workforce opportunities for historically marginalized communities. **Progress Toward Outcome:** States throughout the region are eligible to receive formula funding through DOE's State-Based Home Energy Efficiency Contractor Training Grants. NEEP is engaging with state energy offices and preparing to provide technical assistance to help implement equitable training opportunities. In the fourth quarter, NEEP held a working group meeting on the importance of upskilling the contractor workforce for state energy offices.	50%
4. Three energy efficiency program implementers (New Jersey, New York, Rhode Island) modify programs to expand delivery of deep energy efficiency retrofits over direct install measures. **Progress Toward Outcome:** New Jersey initiated the stakeholder process to plan for the state's next round of energy efficiency funding. The proposed framework includes a statewide building decarbonization program that is focused on converting customers from oil and propane to electric services. In the first Order Approving the framework for the New Jersey Triennium 2 Energy Efficiency Programs for the state, it requires that utilities design "incentives for whole home EE and electrification solutions, including solutions that generate deep, long-lasting, and cost-effective energy strategies. Utilities will also be submitting plans for Building Decarbonization (fuel switching measures) as part of this Triennium. Plans are expected to be filed by December.	33%

Progress Toward 2023 Outcomes	% Complete at Q4
5. Three energy efficiency programs (Massachusetts, New York, Vermont) increase the number of measures included in their whole-building retrofit programs. **Progress Toward Outcome:** New Jersey BPU has ordered utilities to file plans for deeper whole home measures. The utilities filed plans in December outlining new initiatives for deeper whole home retrofits.	0%

Solutions for Low-Carbon States and Communities

NEEP's Solutions for Low-Carbon States & Communities project facilitates the development and implementation of various building decarbonization initiatives with state and local governments. Work is conducted through stakeholder engagement, facilitation of topical working groups and cohorts, research, resource development, and by aiding in the creation of flexible software tools that enable jurisdictions to meet their climate goals. NEEP's work continues to focus on supporting communities in considering and applying for federal funding opportunities.

ReMaine

In October, NEEP began year two of the ReMaine Clean Energy Internship Program, after placing 26 interns in paid clean energy positions in year one. Internships ranged from weatherization technicians to roles in engineering, marketing, community solar sales, and more. In November, a member of the team presented results from the program's first year at the New England Home Performance Conference. During year two, NEEP, The JPI Group, and other partners will place 16 more interns by September 30th, 2024. NEEP also met with diverse organizations across the state that serve job seekers and work with employers, in hopes of coordinating to reduce the need for direct recruiting. These organizations included Portland Adult Education, JMG (Jobs for Maine Graduates), Maine Housing, and others.

CT DEEP Geothermal Project

During the fourth quarter, NEEP continued working with the Connecticut Department of Energy and Environmental Protection (CT DEEP), University of Connecticut, and the Wallingford Housing Authority on a U.S. DOE-funded networked geothermal feasibility project. The project involves designing a geothermal heating and cooling system for an affordable housing community which will serve as a model for other jurisdictions. In the fourth quarter, NEEP developed surveys for four different stakeholder groups to gather information for a workforce needs assessment, led a meeting with the Stakeholder Advisory Committee, developed a project website hosted by CT DEEP, and held introductory interviews with geothermal stakeholders in the region. A member of the NEEP team also moderated a panel about networked geothermal at the U.S. Green Building Council Connecticut Chapter's conference, Northeast Summit for a Sustainable Built Environment.

Buildings UP

During the fourth quarter, NEEP began working with nine winners of the Buildings UP Phase 1 Prize serving as their Regional Navigator (RN). Each team attended a kickoff meeting where NEEP and the Buildings UP Admin Team (DOE, NREL - National Renewable Energy Laboratory, R2E2) introduced themselves and learned about each of the nine different retrofit initiatives. This project will give NEEP great insight into different community level retrofit models that we can support, amplify, and carry to other areas. Notable projects include creating local one-stop-shop coordinators, focusing on small island communities, and focusing on faith-based buildings. Many of these nine projects will benefit from other NEEP initiatives such as the Total Building Performance Certificate and heat pump market transformation work.

Community Driven Transportation Planning

In October, NEEP launched a new project funded by the Department of Energy's Vehicle Technologies Office, called Community Driven Transportation Planning. NEEP is the prime recipient and is working with Vermont Clean Cities Coalition, Connecticut Southwestern Areas Clean Cities Coalition, Vital Communities, and the Upper Valley Lake Sunapee Regional Planning Commission. The project involves working with "target communities" to conduct transportation audits, determine high priority transportation decarbonization actions, identify workforce and public education needs, and develop implementation plans. The duration of the project is 30 months, ending in March 2026. In the first few months of the project, NEEP started coordinating with the project partners to begin the transportation audits in the first quarter of 2024.

Federal Funding

During the fourth quarter, the State and Community Solutions team worked with NEEP's Policy and Market Transformation teams on a webinar for state energy offices on the Contractor Training Grants from the Department of Energy. The team presented the ReMaine Clean Energy Internship Program as a potential model for training new energy efficiency contractors, placing entry level candidates in clean energy roles and subsidizing wages in the short term. Team members also met with partners in the region to discuss and coordinate strategies for supporting communities on federal funding, including Building Electrification Accelerator and Browning the Green Space.

Community Level Electrification

Increasingly, states and communities are interested in local electrification initiatives to reduce energy consumption and greenhouse gas emissions from their buildings. Experiences from partner organizations such as the Massachusetts Clean Energy Center, NYSERDA, Abode Energy and others have shown that neighbor-to-neighbor coaching is an effective strategy. From additional conversations with electrification-focused organizations and local communities, NEEP identified obstacles to scaling up community electrification programs including the funding of paid positions, access to reliable marketing and training materials, and access to Customer Relationship Management tools. In the fourth quarter, NEEP had promising discussions with partner organizations such as Abode, Energy Sage, and the Building

Electrification Accelerator (BEA) about organizing support and technical assistance (TA). These conversations may yield funding streams for this work in the new year.

Benchmarking and Building Performance Standards

While Building Performance Standards (BPS) can play a key role in helping meet climate goals, they are still a relatively new concept with unproven real-world results. This past quarter, NEEP and ClearlyEnergy released a report analyzing the carbon impact of BPS on jurisdictional climate targets and presented the information during a public webinar. The report is based on data from eight existing BPS policies from across the country, including five from the NEEP region.

NEEP developed several BPS-related deliverables last quarter including *"Building Resilient Communities: Enhancing Building Energy Resiliency Through Building Performance Standards and Energy Codes"*, and an Appendix for the New Jersey Zero Energy Building Roadmap that provided a summary of BPS in jurisdictions across the Northeast region. An expanded version of the appendix was created for general technical assistance and includes summaries of BPS from across the country. This resource is still being reviewed internally and is not yet published.

Remotely

NEEP and ClearlyEnergy completed the NYSERDA grant-funded project on Remotely, the virtual home energy audit tool, in December. NEEP and ClearlyEnergy developed a final report for NYSERDA, complete with information on the users and homes that were assessed using the tool, user feedback, and use cases. In total, the app was downloaded 115 times, and 51 home energy assessments were completed in New York. Several other cities and states have since expressed interest in pilot programs with Remotely.

Progress Toward 2023 Outcomes	% Complete at Q4
1. Four states (Connecticut, Massachusetts, New York, Rhode Island) pass or implement building decarbonization strategies. **Progress Toward Outcome:** Outcome was completed in Q3.	100%
2. Six states, utilities, or program administrators increase support of and direct new resources towards community-level decarbonization initiatives while specifically addressing equity in disadvantaged communities through these programs. **Progress Toward Outcome:** Clean Energy New Hampshire won nearly $500,000 for energy efficiency improvement projects in rural communities across the state in October.	100%

Progress Toward 2023 Outcomes	% Complete at Q4
Massachusetts established the Federal Funds and Infrastructure Office (FFIO) in October and set aside $50 million of matching funds and $12 million for local government technical assistance to help municipalities win federal funding. In December Maryland relaunched the annual Energy Efficiency Equity Grant Program, making $19.5 million available to nonprofits and local governments for LMI households in FY 2024.	
3. Fifteen jurisdictions pass or implement innovative decarbonization policies/programs targeting existing or new buildings. **Progress Toward Outcome:** Providence, RI passed a city-wide benchmarking ordinance which requires large commercial, institutional, and multifamily building owners to annually report their energy consumption in ENERGY STAR Portfolio Manager and disclose it to the city. In December New York City passed green zoning "City of Yes for Carbon Neutrality," helping encourage more building retrofits. New York State passed a law to prohibit fossil fuel equipment and building systems in most new construction beginning in 2026 (S4006c/A3006c). Efficiency Maine is now incentivizing the use of whole home heat pumps by offering a new heat pump rebate (up to $6400 depending on income level) for systems that can support 80% of the building's heating load. The Massachusetts Department of Public Utilities issued a new ruling that set a framework for reducing the use of natural gas for heating in favor of electric heating.	100%